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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,457	05/25/2005	Takenobu Arima	L9289.05138	6473

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EXAMINER	
DAVENPORT, MON CHERI S	
ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
11/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/536,457	ARIMA ET AL.	
	Examiner	Art Unit	
	Mon Cheri S. Davenport	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Objections

1. **Claim 4** objected to because of the following informalities: Regarding claim 4 included undefined acronym "CQI." Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims **1-13** rejected under 35 U.S.C. 102(b) as being anticipated by Krishnamoorthy et al. (US Patent Application Publication 20020051424).

Regarding **claim 1-2** Krishnamoorthy et al. disclose a base station apparatus comprising a determination section that determines adaptive modulation parameters used to transmit a transmission packet directed to a mobile station based on channel quality between the own station and said mobile station and QoS of said transmission packet(see figure 1, [0006] and [0015], lines 1-11, wireless communication system, see [0021], lines 2-15, the modulation scheme changes per time slot as a function channel quality and user requirements (QOS)) and data rate).

Regarding **claim 3 and 13** Krishnamoorthy et al. disclose a base station apparatus that determines adaptive modulation parameters used to transmit a transmission packet directed to a mobile station based on channel quality between the own station and said mobile station, comprising:

a change section that changes a correspondence between said channel quality and adaptive modulation parameters determined based on said channel quality, based on QoS of said transmission packet(see figure 1, [0006] and [0015], lines 1-11, wireless communication system, see [0021], lines 2-15, the modulation scheme changes per time slot as a function channel quality and user requirements (QOS)) and data rate); and

a determination section that determines adaptive modulation parameters used to transmit said transmission packet using said changed correspondence(see [0026], lines 1-5, the modulation schemes, required data rate and QOS is assigned(determined), see [0024], lines 12-15) .

Regarding **claim 4** Krishnamoorthy et al. disclose a base station apparatus that determines adaptive modulation parameters of a transmission packet directed to a mobile station based on a CQI transmitted from said mobile station, comprising:

a correction section that corrects the CQI transmitted from said mobile station based on QoS of said transmission packet(see [0027], lines 4-9, modulation scheme is selected for each time slot employed by the user. Since the modulation scheme that may be employed for any channel is a function of the channel quality, which may change over time, it is necessary to monitor the channel quality in order to determine the modulation scheme that can be employed); and

a determination section that determines adaptive modulation parameters of said transmission packet based on the corrected CQI(see [0027], lines 9-12, the modulation scheme

selected is the one having the highest bit/symbol ratio that can be achieved which satisfies the QoS requirements given the current channel characteristics).

Regarding **Claims 5 and 6** Krishnamoorthy et al. discloses everything as applied above (*see claims 1 and 3*). In addition the apparatus includes:

wherein said determination section determines said adaptive modulation parameters further based on an achievement ratio of QoS of said transmission packet transmitted in the past(see [0024], lines 8-12, initial modulation scheme assigned is based on historical information as to a modulation scheme that is usually successful for this user).

Regarding **Claims 7 and 8** Krishnamoorthy et al. discloses everything as applied above (*see claims 1 and 3*). In addition the apparatus includes:

wherein said determination section determines said adaptive modulation parameters further based on a remaining time with respect to a transmission allowable delay time of said transmission packet(see [0028], lines 1-5, evaluates the bit rate that is available given the current number of time slots assigned for the user and the modulation scheme of each of those time slots and tests to determine if additional data rate is required to meet the users required bit-rate).

Regarding **Claims 9 and 10** Krishnamoorthy et al. discloses everything as applied above (*see claims 1 and 3*). In addition the apparatus includes:

further comprising a scheduler that schedules transmission times based on a remaining time with respect to a transmission allowable delay time of said transmission packet (see figure

4, section 409, more bandwidth required, 413, less bandwidth required, see [0028-30], determine if less data rate than that currently available given the number of time slots assigned to the user and the modulation scheme of each is required by the user).

Regarding **claim 11** Krishnamoorthy et al. disclose a mobile station apparatus comprising:

a determination section that determines adaptive modulation parameters used when a base station transmits a transmission packet based on channel quality between said base station and the own station and QoS of said transmission packet transmitted from said base station to the own station; and

a notification section that notifies said base station of the determined adaptive modulation parameters (see [0025], step 305, the user is entered into list of active users , to be recognized, which reads on notification, see [0024], lines 12-15, the QOS is assigned to the user, based on the type of service requested)

Regarding **claim 12** Krishnamoorthy et al. disclose a mobile station apparatus that determines adaptive modulation parameters used by a base station for a transmission packet directed to the own station based on channel quality between said base station and the own station and notifies said base station of said adaptive modulation parameters, comprising:

a change section that changes a correspondence between said channel quality and adaptive modulation parameters determined based on said channel quality, based on QoS of said transmission packet (see [0027], lines 4-9, modulation scheme is selected for each time slot

employed by the user. Since the modulation scheme that may be employed for any channel is a function of the channel quality, which may change over time, it is necessary to monitor the channel quality in order to determine the modulation scheme that can be employed); and

a determination section that determines adaptive modulation parameters used for said transmission packet using said changed correspondence (see [0027], lines 9-12, the modulation scheme selected is the one having the highest bit/symbol ratio that can be achieved which satisfies the QoS requirements given the current channel characteristics).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mon Cheri S. Davenport whose telephone number is 571-270-1803. The examiner can normally be reached on Monday - Friday 8:00 a.m. - 5:00 p.m. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MD/md
November 25, 2007

Seema S. Rao 11/26/07
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